

explosions took place in rapid succession; the lath and plaster were projected, as it were, en masse, from the opposite wall, and, at the same moment, there was a rush of whitish flame, outward and upward, where, finding nothing to fasten upon, it expired in the sky exactly in the manner of exhausted gas. Our observer—on experimenting—discovered that, "As soon as the heat rose to a certain pitch in the front of the lathed panels experimented upon, there was emitted from the back of them a dense smoke of a peculiarly pungent and disagreeable odour. The simple apparatus of a wine-glass, wrapped in a wet handkerchief, speedily demonstrated that this smoke in part consisted of steam, and, with the assistance of a friend, it was found that it owed its pungency to the presence of pyroligneous acid, and its offensive odour to that of carburetted hydrogen gas—the same gas that is burned in our streets." It is thus easy to account for the violent explosions when we know that this highly inflammable gas is generated behind the lath and plaster of a building on fire.

It is not in the province of this paper to explain how these gases are formed. It may merely be stated that the pyroligneous acid is produced from the heated wood-work; and that, in manufactories of pyroligneous acid, the quantity of carburetted hydrogen gas, which comes off along with the acid, is so great as to require an apparatus for its removal and consumption.

In respect of the price of the intonaco, this will, of course, rest with the manufacturers. It has been sold at the following rates:—the coarse, 2s. 6d. per cwt.; the fine, or pure white, 3s. 6d. G. S. D.

PARIS BY MOONLIGHT.

THE COLOSSEUM IN THE REGENT'S PARK.

THE Colosseum, as arranged by Mr. William Bradwell, is the most extraordinary and striking exhibition in the kingdom; and in the new panorama which has just been produced there, under his direction, by Mr. Danson, another triumph has been achieved. "Paris by Moonlight" is a most effective and beautiful production. "London by Night" was a wondrous deception:—We once heard an old dame there, after searching out her own house in Fleet-street, exclaim, in full belief, to her daughter, who stood by her, "Why, Mary, there's that Tom shutting up the shop, and it isn't eight o'clock yet!"—but Paris is more artistical, and the disposition of the city, the whiteness of the public buildings, the fountains, gardens, boulevards, and thousand lamps, afford even greater opportunity to the artist than our own less glittering, though more wonderful city.

Those who have not seen Paris, and may not be willing to risk the journey just now, may get a perfect idea of it by a visit to the Colosseum; and those who do know it will have their recollections revived and associations awakened.

METALS.

THE Iron Hardware and Metal Trades Pension Society held their fifth anniversary festival at the London Tavern, on 26th ult., the Lord Mayor in the chair, and the sheriffs of London and Middlesex, with about 150 gentlemen, present. The balance in hand at the close of the past year was 2,711*l.* odd, and several hundreds have since been added. According to the Belgian papers, the furnaces lately out of blast about Liege and Charleroi are getting into activity again, but the iron and coal trades have been and still are greatly depressed. An accident occurred lately at the iron foundry of Chatillon-sur-Indre, where, in pouring molten metal for a large anvil into damp moulds, it was violently thrown out, and five men killed and fifteen severely burnt. A correspondent of the *Mining Journal* forwards the results of four analyses of moulding sand, by Herr Kaupmann, of the laboratory of the Royal Institution at Berlin, from which it appears that, in widely different localities, the best article is remarkably alike in composition, and that it may be artificially produced, by mixing about 93 parts of silicious earth, or quartzose sand, with 2 parts of oxide of iron and 5 of clayey or argillaceous earth, as free as possible from lime. These proportions he particularly recommends for the casting of

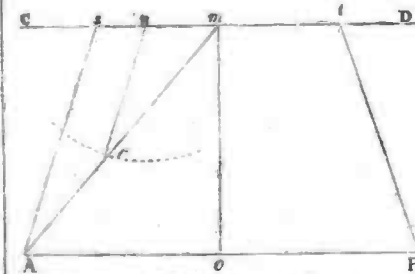
statues, &c.—Schafpauel's powder, used in Germany for rendering iron malleable and cleansing it from sulphur, phosphorus, and arsenic, consists of 1*½* lb. of peroxide of manganese, 3*½* lb. of common salt, and 10 ozs. of potter's clay. It has been proposed to employ sal-ammoniac instead of the salt, as the chlorine in sal-ammoniac is double the quantity of that contained in an equal weight of salt, and no clay is required; it does not increase the slag, and the quantity of hydrogen gas in sal-ammoniac (7 or 8 per cent.) contributes much to the cleansing of the iron. The expensive cost of the sal-ammoniac, however, has prevented its employment on a large scale.

Messrs. J. and W. Dean, of Newcastle, in the *Mechanics' Magazine*, ask the following questions of practical men:—Can small articles be cast, of cast-steel, with any degree of sharpness, and by what means? Can these cast-steel articles, so cast, be made to receive any degree of hardness; and by what methods would such steel, when annealed, be capable of being turned? Which is the best mode of proceeding in making and melting cast-steel, as regards fluxes, heat, crucibles, &c.?—A rich mine of black lead has been opened in Jeffrey, N.H., United States, at the foot of the Monadnock mountain. It brings about seventy-five dollars per ton. The mine was purchased for the sum of fifty dollars.

C. B. R.'S QUERY.—TO SET OUT A CANT.

C. B. R. asked* for a rule to construct two lines on the ends of a given line, that would intersect a line so as to make it equal to them in length, the line being parallel to the given line, and also at a given distance from it.

In vol. iv., p. 93, a mode to effect this is given very fully, together with an algebraic solution. We insert, however, one other mode, from more than a dozen which have been forwarded to us.



Data—Line AB, indefinite line CD, parallel to AB. The distance *om* between both lines.

Bisect AB in *o*, draw *om* perpendicular to CD, join *Am*: take any distance *mn* on the line *mc*, then on the centre *m* with a radius double *mn* describe an arc cutting *mA* in *r*, join *nr* and draw *As* parallel to *nr*. Make *mt* equal to *ms* and join *Bt*; then will *As*, *st*, and *tB* be all equal. J. B.

ACCIDENT ON THE GREAT WESTERN RAILWAY.

A FRIGHTFUL accident occurred at the Shrewsbury station on Wednesday, to the express train, which left Bristol at two o'clock for London. The circumstances, as we learnt them on the line immediately after the melancholy occurrence, were these. The train was a few minutes after time, and the porter at the station, who had been away at dinner, concluded on his return that it had passed, and brought a horse-box and truck near to, if not on to, the rails, ready for the down train. The express train came on at a rate of fifty miles an hour, telegraphed, if we understood rightly, that all was clear. A collision was, of course, the result; the horse-box was swung round, and the carriage next the tender was dashed to pieces, killing four, if not more, and maiming all the other passengers, with the exception of one of the Company's servants, who happened to be seated in a corner, and marvellously escaped. The writer of this notice was hastening over Bristol-bridge, to proceed to town by this train, and was stayed against his will through a fire in the extensive warehouses of the Messrs. King, the well-known Bristol mer-

chants, by which they were entirely destroyed. With some repining he took his seat in the train which went immediately after; and his feelings when he reached the scene of the disaster need not be described,—they shake him even at this moment, though thankfulness is predominant. If our readers, when matters appear to go crossly, chance to remember this occurrence, they may perhaps feel better able to say, "Everything is for the best," and pursue their way, if it be a right one, with renewed vigour and an assured heart.

RENOVATION OF WELLESBOURNE CHURCH.

NEAR STRATFORD-ON-AVON.

WELLESBOURNE CHURCH, an edifice of Norman foundation, standing between Stratford and Warwick, has been renovated under the direction of Mr. J. P. Harrison, of London. It had been greatly mutilated and disfigured. According to the *Worcester Journal*, the whole of the renovations have been made in the decorated style. The north aisle has been entirely rebuilt, the nave considerably lengthened, and a new chancel erected, it being found necessary to take down the old Norman arch, which has been replaced in the side of the chancel opening into the Mordaunt aisle. A very curious small quatrefoil window, which stood near the ground on the exterior of the east end of the original south aisle, has been re-inserted in a similar position in the new wall. The chancel seats are of oak, with broad poppy-head desks; the pulpit, which stands within the nave on the north side, is of carved oak, in compartments of an octagonal shape, and springing from a central stem; the prayer desks are low and open, and the bible-stand of carved oak, supported on a pedestal of the same wood. The floors of the chancel and Mordaunt aisles are laid with Minton's encaustic tiles, in patterns of red and yellow, with a border of plain black, with an ornamented tile at each corner; the walls around the altar and chancel are also finished with tiles.

The Mordaunt aisle is separated from the vestry by a stone screen, into which is worked, as a border, blue and yellow tiles. In the centre is to be inserted a full-length brass reclining figure in memory of the late very universally respected Sir John Mordaunt, over which is to be placed an appropriate legend.

The roof is open, shewing the timbers, stained dark, and plastered in the intervals. The windows, which have cost 400*l.*, are of a stained-glass. The chancel window has full-length figures, of St. Peter in the centre, with St. James and St. John on either side. Three lancet windows on the south side of the chancel contain subjects illustrative of the principal events in the life of St. Peter. These windows are by Holland, of Warwick.

The window in the Mordaunt aisle, executed by Ward and Nixon, London, has the figures of angels, St. Bartholomew and St. Thomas; in the two lower divisions are illustrations of our Saviour raising Lazarus from the dead, and of Mary in the garden.

The east window looking into the south aisle contains two subjects—Christ raising the daughter of Jairus, and Christ restoring to life the widow's son, and is by Willement.

The church has, with the exception of the tower, been almost entirely rebuilt of blue stone, with Ginton stone dressings; the roofs are covered with dark Broseley tiles, and surmounted with ornamented pinnacled tiles.

BEDFORD GAOL TENDERS.—A correspondent has forwarded to us the following list of tenders, delivered for Bedford Gaol, with a somewhat mysterious statement, complaining of improper conduct on the part of some of the persons concerned. As the latter is not authenticated by the name of the writer, we are unable to insert it:—

Woodruff, Bedford	£19,850
Miller and Co., ditto	19,105
Cobb and Co., ditto	18,888
Jackson, London	18,300
Clarke, Faversham	17,800
Parker, Thrapston (accepted)	17,197

* See p. 302 ante.